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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,282	09/30/2003	Shin-Ichiro Yakita	1232-5167	7068

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EXAMINER	
RAIZEN, DEBORAH A	

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/676,282	YAKITA ET AL.	
	Examiner	Art Unit	
	Deborah A. Raizen	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-11 and 13-23* is/are rejected.

7)☒ Claim(s) *6 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0604*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The disclosure is objected to because of the following informalities: On page 21, in Table 2, the heading of the fourth column is labeled "*l*", but it appears to be the same quantity labeled "m" in line 3 of page 21. Also, on page 37, the same quantity is labeled "l". For consistency and for avoiding confusion with the number "1", it would be better if the quantity were labeled "m" everywhere.

Appropriate correction is required.

Claim Objections

3. Claims 5, 8, and 15 are objected to because of the following informalities:

In claim 5, in the last line, "then" should be replaced with "than".

In claims 8 and 15, lines 2-5, recite that zoom tracking data represent "a moving track of the second lens unit for realizing the same image-forming position at the same object distance

regardless of movement of the first lens unit". However, it appears from applicants' disclosure that the position of the second lens unit varies with movement of the first lens unit in accordance with the zoom tracking data, as shown in the figures. Perhaps the intended word was "performance".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Cha (5,600,372).

In regard to claim 1, Cha discloses a control apparatus (Fig. 1: conventional art) controlling a zoom lens (10) including, in order from an object side, a first lens unit (12) which moves for varying the magnification, a light amount adjusting unit which adjusts a light amount (13), and a second lens unit which moves for focusing (15), the zoom lens being mountable on a camera (col. 1, lines 14-16), the control apparatus comprising: a memory (microcomputer 60) which stores in-focus position data of the second lens unit with respect to a position of the first lens unit (Fig. 2); and a controller which controls a position of the second lens unit with respect

to a position of the first lens unit based on the in-focus position data (col. 2, lines 12-17), wherein the controller sets a reference position of the second lens unit for position control of the second lens unit with the in-focus position data based on an in-focus position of the second lens unit (col. 2, lines 47-51, col. 3, lines 1-3 and 4-12) for an object at anywhere from a minimum object distance to an infinite distance (col. 2, lines 38-42; any object for which a focused condition is attained is inherently located anywhere from a minimum object distance to an infinite distance because focusing cannot be attained for a closer object and because there is no distance greater than infinite) when the first lens unit is located at a wide-angle end (col. 2, lines 41-42 and lines 65-67).

In regard to claim 2, in the Cha control apparatus, the in-focus position data is zoom tracking data which represents a moving track of the second lens unit for realizing the same image-forming position at the same object distance regardless of movement of the first lens unit (Fig. 2, col. 2, lines 12-16 and 25-28), the memory stores a plurality of the zoom tracking data for object distances (Fig. 2 and col. 2, lines 12-16), and the controller sets the reference position as a base point of one of the plurality of zoom tracking data based on the in-focus position of the second lens unit (col. 2, line 29-35: compensating for flange-back is performed each of curves S1, S2, S3, and S4; col. 3, lines 8-12).

In regard to claim 18, Cha discloses a zoom lens system (10 in Fig. 1) comprising: a zoom lens including, in order from an object side (left), a first lens unit which moves for varying the magnification (12), a light amount adjusting unit which adjusts a light amount (13), and a

second lens unit which moves for focusing (15); and the control apparatus according to claim 1 (as explained above).

In regard to claim 21, Cha discloses an image-taking system (Fig. 1) comprising: the zoom lens system according to claim 18 (as explained above); and a camera on which the zoom lens system is mounted and which takes an object image formed by the zoom lens (col. 1, lines 14-18).

6. Claims 5, 7, 8, 11, 13, 14, 19, 20, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by JP-2000-121911- A to Nakamura et al. (hereinafter: Nakamura).

In regard to claim 5, Nakamura discloses a control apparatus (Fig. 2) controlling a zoom lens (1) including (Figs. 2 and 6), in order from an object side, a first lens unit which moves for varying the magnification (42), a light amount adjusting unit which adjusts a light amount (43), and a second lens unit which moves for focusing (45), the zoom lens being mountable on a camera (Fig. 2), the control apparatus comprising: a memory which stores in-focus position data of the second lens unit with respect to a position of the first lens unit (inherently disclosed because of the disclosure of "referring to a table" in line 3 of the English-language abstract and because of Figs. 3, 7, and 8, which show such in-focus position data); and a controller which controls a position of the second lens unit with respect to a position of the first lens unit based on the in-focus position data (inherently disclosed because a zoom lens control apparatus of this type, which uses the zoom tracking data shown in Fig. 3, requires such a controller), wherein the controller sets a reference position of the second lens unit for position control of the second lens

unit (ΔF, for a zoom shift ΔZ, abstract, "solution", lines 9-11) with the in-focus position data based on a difference (abstract: ft-fw) between an in-focus position of the second lens unit for an object at anywhere from a minimum object distance to an infinite distance when the first lens unit is located at a wide-angle end (abstract: "solution", lines 2-4) and an in-focus position of the second lens unit for the object when the first lens unit is located at a predetermined focal length position other then the wide-angle end (telephoto end, lines 4-7).

In regard to claim 7, in the Nakamura control apparatus, the memory stores data for determining the reference position based on the difference between the in-focus positions in accordance with a distance to the object (inherently disclosed because Fig. 7 shows that zoom tracking curve is different for different object distances, requiring a different value for ΔF), and the controller sets the reference position with the data (abstract, "solution", lines 9-11).

In regard to claim 8, as understood, in the Nakamura control apparatus, the in-focus position data is zoom tracking data which represents a moving track of the second lens unit for realizing the same image-forming position (understood as "performance") at the same object distance regardless of movement of the first lens unit (Fig. 7), the memory stores a plurality of the zoom tracking data for object distances (inherently disclosed because the curves for different object distances are shown in Fig. 7 to be different), and the controller sets the reference position as a base point of one of the plurality of zoom tracking data based on the difference in the in-focus positions of the second lens unit (abstract, lines 9-11, and inherently disclosed because the

curves for different object distances are shown in Fig. 7 to be different, requiring a different adjusted value ΔF for each).

In regard to claim 11, Nakamura discloses a control apparatus (Fig. 2) controlling a zoom lens (1) including (Figs. 2 and 6), in order from an object side, a first lens unit which moves for varying the magnification (42), a light amount adjusting unit which adjusts a light amount(43), and a second lens unit which moves for focusing (45), the zoom lens being mountable on a camera (Fig. 2), the control apparatus comprising: a memory which stores in-focus position data of the second lens unit with respect to a position of the first lens unit (inherently disclosed because of the disclosure of "referring to a table" in line 3 of the English-language abstract and because of Figs. 3, 7, and 8, which show such in-focus position data); and a controller which controls a position of the second lens unit with respect to a position of the first lens unit based on the in-focus position data (inherently disclosed because a zoom lens control apparatus of this type, which uses the zoom tracking data shown in Fig. 3, requires such a controller), wherein the controller sets a reference position of the second lens unit for position control of the second lens unit (ΔF, for a zoom shift ΔZ, abstract, "solution", lines 9-11) with the in-focus position data based on a difference (abstract: ft-fw) between in-focus positions of the second lens unit for an object at anywhere from a minimum object distance to an infinite distance when the first lens unit is located at least two predetermined focal length positions (abstract, solution, lines 2-4 and 4-7).

In regard to claim 13, in the Nakamura control apparatus, one of the two predetermined focal length positions is a telephoto end (abstract, solution, lines 4-7).

In regard to claim 14, in the Nakamura control apparatus, the memory stores data for determining the reference position based on the difference between the in-focus positions of the second lens unit in accordance with a distance to the object (inherently disclosed because Fig. 7 shows that zoom tracking curve is different for different object distances, requiring a different value for ΔF), and the controller sets the reference position with the data (abstract, "solution", lines 9-11).

In regard to claims 19 and 20, Nakamura discloses a zoom lens system comprising: a zoom lens (Figs. 2 and 6) including, in order from an object side, a first lens unit which moves for varying the magnification (42), a light amount adjusting unit which adjusts a light amount (43), and a second lens unit which moves for focusing (45); and the control apparatus according to claim 5 (for claim 19) or claim 11 (for claim 20) (as explained above).

In regard to claims 22 and 23, Nakamura discloses an image-taking system comprising: the zoom lens system according to claim 19 (for claim 22; as explained above) or claim 20 (for claim 23; as explained above); and a camera on which the zoom lens system is mounted and which takes an object image formed by the zoom lens (Fig. 2, which shows CCD 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cha (5,600,372) in view of Kaneda (6,115,552).

In regard to claim 3, Cha discloses a control apparatus according to claim 1, as explained above in Claims Rejections – 35 USC § 102. However, Cha does not disclose that the controller performs setting operation of the reference position when power supply thereto is started from the camera or from the outside. Kaneda discloses a similar control apparatus in which the controller performs setting operation of the reference position when power supply thereto is started (col. 19, lines 9-17). Furthermore, Kaneda discloses that performing the setting operation when power supply to the controller is started has the advantage of correcting for change in flange back length with temperature or with lens interchange (col. 7, lines 11-37). Therefore, it would have been obvious to one of ordinary skill the art to enable the controller in the Cha control apparatus to perform setting operation of the reference position when power supply thereto is started, as disclosed in Kaneda, because performing the setting operation at that time correct for change in flange back length with temperature or lens interchange, as taught by Kaneda.

In regard to claim 4, Cha discloses a control apparatus according to claim 1, as explained above in Claims Rejections – 35 USC § 102. However, Cha does not disclose that the controller detects the presence or absence of a change in the reference position while images are taken, and when any change is detected, the controller performs new setting operation of the reference position. Kaneda discloses a similar control apparatus in which the controller detects the presence or absence of a change in the reference position while images are taken (col. 19, lines 34-47), and when any change is detected, the controller performs new setting operation of the reference position (col. 20, lines 22-28 and col. 13, lines 49-67). Furthermore, Kaneda discloses that performing a new setting operation of the reference position while images are taken has the advantage of correcting for temperature variation over time (col. 19, lines 44-47 and col. 20, lines 26-28). Therefore, it would have been obvious to one of ordinary skill the art to enable the controller in the Cha control apparatus to perform a new setting operation of the reference position while images are taken because such a new setting operation can correct for temperature variation over time, as taught by Kaneda.

9. Claims 9, 10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (JP-2000-121911-A) in view of Kaneda (6,115,552).

In regard to claims 9 and 16, Nakamura discloses the control apparatus according to claim 5 (base claim of claim 9) or claim 11 (base claim of claim 16; as explained above in Claims Rejections – 35 USC § 102, Nakamura discloses a control apparatus that meets the base claims). However, Nakamura does not disclose that the controller performs setting operation of the reference position when power supply thereto is started from the camera or from the outside.

Kaneda discloses a similar control apparatus in which the controller performs setting operation of the reference position when power supply thereto is started (col. 19, lines 9-17). Furthermore, Kaneda discloses that performing the setting operation when power supply to the controller is started has the advantage of correcting for change in flange back length with temperature or with lens interchange (col. 7, lines 11-37). Therefore, it would have been obvious to one of ordinary skill the art to enable the controller in the Nakamura control apparatus to perform setting operation of the reference position when power supply thereto is started, as disclosed in Kaneda, because performing the setting operation at that time correct for change in flange back length with temperature or lens interchange, as taught by Kaneda.

In regard to claims 10 and 17, Nakamura discloses the control apparatus according to claim 5 (base claim of claim 9) or claim 11 (base claim of claim 16; as explained above in Claims Rejections – 35 USC § 102, Nakamura discloses a control apparatus that meets the base claims). However, Nakamura does not disclose that the controller detects the presence or absence of a change in the reference position while images are taken, and when any change is detected, the controller performs new setting operation of the reference position.

Kaneda discloses a similar control apparatus in which the controller detects the presence or absence of a change in the reference position while images are taken (col. 19, lines 34-47), and when any change is detected, the controller performs new setting operation of the reference position (col. 20, lines 22-28 and col. 13, lines 49-67). Furthermore, Kaneda discloses that performing a new setting operation of the reference position while images are taken has the advantage of correcting for temperature variation over time (col. 19, lines 44-47 and col. 20,

lines 26-28). Therefore, it would have been obvious to one of ordinary skill the art to enable the controller in the Nakamura control apparatus to perform a new setting operation of the reference position while images are taken because such a new setting operation can correct for temperature variation over time, as taught by Kaneda.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (JP-2000-121911-A) in view of JP-04-042108 to Ookawa (hereinafter: Ookawa)

In regard to claim 15, as understood, Nakamura discloses the control apparatus according to claim 11, as explained above. Furthermore, in Nakamura, the in-focus position data are zoom tracking data which represent a moving track of the second lens unit for realizing the same image-forming position (understood as "performance") at the same object distance regardless of movement of the first lens unit (Fig. 7), and the memory stores a plurality of the zoom tracking data for object distances (inherently disclosed because the curves for different object distances are shown in Fig. 7 to be different).

However, Nakamura does not disclose that the controller selects one of the plurality of zoom tracking data based on the difference in the in-focus positions of the second lens unit and sets the reference position from the selected zoom tracking data.

Ookawa discloses a similar control apparatus (Figs. 1 and 2) in which the controller selects one of the plurality of zoom tracking data based on the difference in the in-focus positions of the second lens unit (master lens 104) and sets the reference position from the selected zoom tracking data (English-language abstract, "constitution", lines 6-9). Furthermore, Ookawa discloses that using the in-focus positions of the master lens 104 that correspond to specific focal

length values to select the tracking curve corresponding to the object distance has the advantage of enabling the high-accuracy, excellent focusing state to be held over the entire zoom range (abstract, lines 9-10). Therefore, it would have been obvious to one of ordinary skill in the art to have the controller in the Nakamura control apparatus select one of the plurality of zoom tracking data based on the difference in the in-focus positions of the second lens unit and set the reference position from the selected zoom tracking data because the control apparatus would hold the high-accuracy, excellent focusing state over the entire zoom range, as taught by Ookawa.

Allowable Subject Matter

11. Claims 6 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of claims 6 and 12, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

The prior art fails to teach a combination of all the features in claims 6 and 12. For example, these features include the detailed structure recited in respective base claims claim 5 and 11 and also the recited condition, in combination with all the other limitations of the claim.

The references of record that meet the limitations of the base claims do not explicitly disclose that the zoom lens satisfies the recited condition and do not disclose all the values

necessary for evaluating the condition. Kaneda discloses the values (Mw = 0.17 mm and s=1, col. 10, lines 26-31; and for a video camera, F=1.8, and allowable circle of confusion ϵ is 0.011 mm, col. 10, lines 10-12) but does not disclose a control apparatus that meets the limitations of claims 5 and 11.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah A. Raizen, Ph.D., J.D., whose telephone number is (571) 272-2336. The examiner can normally be reached on Monday-Friday, from 10:00 a.m. to 3:00 p.m. Eastern Standard Time (a part-time schedule).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached at (571) 272-2328. The USPTO central official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. For more information, see http://pair-direct.uspto.gov. For access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or at 703-305-3028 or at 703-308-6845, or by e-mail at: ebc@uspto.gov. Additional information is available on the Patent EBC Web site at: http://www.uspto.gov/ebc/index.html.

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